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A new hairy species of *Leptogium* (*Collemataceae*) from China

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Abstract — This paper describes *Leptogium weii* sp. nov., a new hairy species from Sichuan, southwestern China. *Leptogium weii* has dense white tomentum on apothecial stalks and thalline margins. It closely resembles *L. burnetiae* in external morphology but differs in having globose isidia on the upper surface and dense tomentum on the apothecial stalk and thalline margin. A key is given to hairy species with tomentose apothecia.

Key words — lichen, *Ascomycota*, *Peltigerales*, corticolous

Introduction

Thirty-two *Leptogium* species have previously been reported in China (Wei 1991, Aptroot 2002, Wang et al. 2010). Here we describe a characteristically hairy new species, *Leptogium weii*.

Material & methods

The type specimen was collected from Sichuan Province in southwestern China, and deposited in Herbarium Mycologicum Academiae Sinicae-Lichenes (HMAS-L). A dissecting microscope (Motic SMZ-140) and a light microscope (Motic B2) were used for the morphological and anatomical studies.

Taxonomy

Leptogium weii H.J. Liu & S. Guan, **sp. nov.** Figure 1

MycoBank MB 519891

Differt a Leptogio burnetiae *isidiis globosis, et marginibus apotheciorum dense hirsutissimis; asci interdum quadrospori.*

Type: China. Sichuan Province, Mt. Gonggashan, Zimeishan (29°37′N 101°53′E), alt. 4000 m, on branch of *Rhododendron* sp. (*Ericaceae*), 29/VII/1982, Xian-Ye Wang, Xie Xiao & Bin Li 9082 (**Holotype**, HMAS-L 031713).

Etymology: The species is named in honour of Professor Jiang-Chun Wei.

Thallus foliose, 6–8 cm in diam. Lobes broadly rounded, 10–20 mm wide, apices entire, undulate; upper surface blue gray, usually shiny, glabrous, without wrinkles, isidiate; isidia globular, laminal to marginal, dense, darker than upper surface; lower surface pale to medium gray, smooth, with a dense covering of long-celled, white hairs, to 0.2 mm long, ± naked near margin. Apothecia ± dense, laminal to submarginal, 1.0–2.5 mm in diam., stipitate; disc dark red brown, concave and finally plane, glabrous, dull; stalk always with dense, suberect to erect, white tomentum; thalline margin smooth, paler than upper surface, non-isidiate, with similar tomentum on stalks, sometimes glabrous when old.

Thallus 90–110 μm thick when moist. Upper cortex paraplectenchymatous, consisting of a single layer of globular, isodiametrical cells, 4–6 μm thick; lower cortex paraplectenchymatous, commonly consisting of a single layer of ellipsoidal thin-walled cells, 8–10 μm thick, or 40–50 μm thick when below apothecia and consisting of 3–4 layers of cells; medulla 80–100 μm thick, composed of loosely interwoven hyphae running in various directions; photobiont *Nostoc* in chains, ± globose, 5–7 μm in diam., ± concentrated near both cortices.

Apothecia 300–400 μm thick (when moist); thalline exciple 100–180 μm wide; proper exciple not seen; epihymenium brown, 10–15 μm high; hypothecium yellowish, 40–50 μm high. Hymenium in its central part 160–210 μm high; paraphyses simple, 1–1.5 μm wide, at apices often thickened (2–3 μm); asci clavate, 125–150 × 20–30 μm, commonly 8-spored, sometimes 4-spored. Ascospores fusiform to ellipsoidal, apices obtuse or sometimes acute, 25–35 × 12–17 μm, transversely septate to submuriform, with 3–5 transverse and 0–1 longitudinal septa, colourless. Conidiomata not observed.

Habitat and distribution: Corticolous on branches of *Rhododendron* sp., in the alpine region of southwestern China.

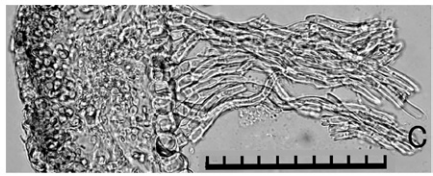
Remarks – *Leptogium weii* is characterized by an upper surface with globular isidia and without wrinkles, long hairs on the underside, white tomentum on apothecial stalks and thalline margins, and (4–)8-spored ascus. It closely resembles *L. burnetiae* C.W. Dodge in external morphology. But the latter always has coralloid isidia, 8-spored ascus, and the apothecium is often isidiate on thalline margin (Jørgensen & Nash 2004, Aragón et al. 2004, 2005, Wang et

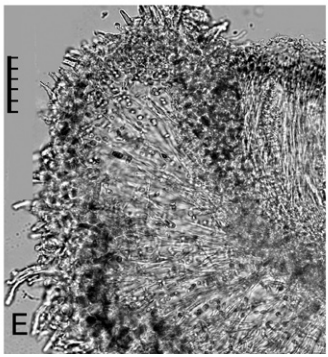
Fig. 1. *Leptogium weii* (holotype). A. Thallus with apothecia. B. Apothecia with tomentose stalk (note the globular isidia on upper surface). C. Thallus cross-section, showing corticated surfaces and long hairs on lower surface. D. Apothecium cross-section. E. Thalline margin (note the dense tomentum on the surface). F. Vertical section of the central part of apothecia (1 stands for hymenium, 2: subhymenium, 3: medulla, and 4: corticated lower surface). G. An ascus with 8 spores. H. An ascus with 4 spores. I. Spores. Scale bars: A = 1 cm; B = 1 mm; C, E–I = 10 μm; D = 100 μm.

A

B

D


C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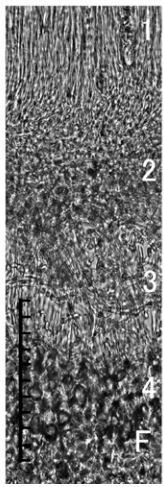
1
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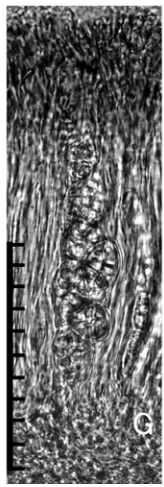
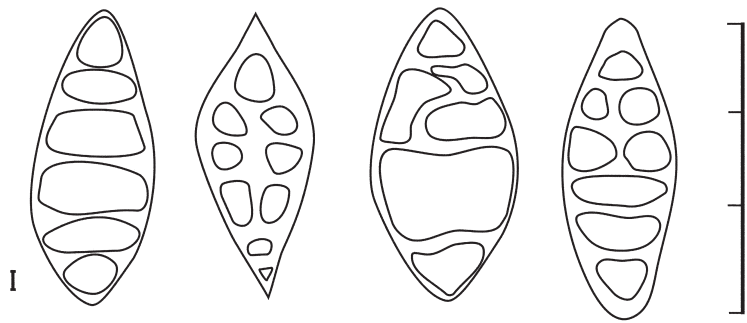

G

H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al. 2010). *Leptogium trichophoroides* P.M. Jørg. & A.K. Wallace and *L. askotense* D.D. Awasthi also have tomentose stalks and thalline exciples, and long hairs on the underside as observed in *L. weii*. But *L. trichophoroides* has wrinkles on a browned upper surface without isidia and smaller spores (18–22 × 9–12 µm) (Jørgensen 1997). *Leptogium askotense* differs from the new species in lacking isidia, having wrinkles on the upper surface and longer spores (30–50 × 10–17 µm) (Jørgensen 1997). *Leptogium sphaerosporum* P.M. Jørg. & Olley is differentiated by phyllidia (without tomentum on apothecial stalk and isidia) on the upper surface and sphaeroid spores (Jørgensen & Olley 2010), while *L. saturninum* is distinguished by a darker upper surface, sessile apothecia with a glabrous thalline exciple and euparaplectenchymatous proper exciple (Sierk, 1964, Jørgensen & Nash 2004).

The hairy species in *Leptogium* have been summarized by Jørgensen (1997). Here we present a key to 12 hairy *Leptogium* species with tomentum on apothecial stalks or thalline margins derived from keys by Jørgensen (1997), Jørgensen & Kashiwadani (2008), and Jørgensen & Olley (2010).

Key to hairy *Leptogium* species with tomentose apothecial stalks or thalline margins

1 Hairs on both sides of thallus ..... *L. australe*
Hairs only on lower surface of thallus 2

2 Upper surface distinctly wrinkled 3
Upper surface smooth or slightly rough, not wrinkled 9

3 Thallus isidiate ..... *L. papillosum*
Thallus not isidiate 4

4 Proper exciple distinct, euparaplectenchymatous 5
Proper exciple absent ..... *L. acutisporum*

5 Thallus normally bluish; apothecia sessile, margin wrinkled ..... *L. arisanense*
Thallus normally dark brownish or greenish 6

6 Apothecia with stiff marginal hairs 7
Apothecia without stiff marginal hairs, sometimes softly hairy on the stalk ..... *L. askotense*

7 Apothecia stalked, with white hairs when young ..... *L. trichophoroides*
Apothecia sessile or short stalked, usually with blackish hairs 8

8 Lobes strap-shaped ..... *L. loriforme*
Lobes short orbicular ..... *L. trichophorum*

9 Thallus isidiate 10
Thallus not isidiate 11

10 Isidia cylindrical coralloid; apothecia rare, often isidiate on margin *L. burnetiae*
Isidia usually granular; apothecia abundant, not isidiate on margin ..... *L. weii*

11 Apothecia prominently stalked ..... *L. pedicellatum*
Apothecia sessile or short stalked ..... *L. menziesii*

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